

VISIT...

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Your Turn

Write a few paragraphs about your own personal hero. Why is he or she your hero? Tell how you feel about this person. Use the writer's checklist to check your writing.



Writer's Checklist

- ☒ **Ideas and Content:** Does my writing say what I mean?
- ☒ **Organization:** Does my **topic sentence** let the reader know what I am writing about?
- ☒ **Voice:** Did I express my feelings about my hero?
- ☒ **Word Choice:** Did I use words that are fresh and new?
- ☒ **Sentence Fluency:** Did I use different sentence types?
- ☒ **Conventions:** Did I use commas in a series correctly? Did I check my spelling?



Talk About It

What would happen if trees disappeared from the world?



Find out more about trees at
www.macmillanmh.com

TREES *for* LIFE

Vocabulary

quest

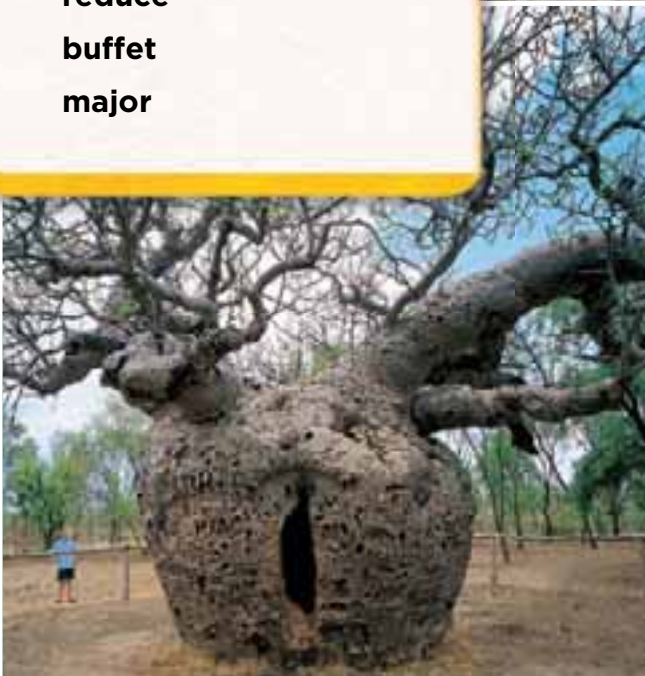
settings

reduce

buffet

major

TREE-RIFIC!



The hollow trunk of this Australian boab tree was once used as a prison.



Thomas Pakenham stands at the foot of a Montezuma cypress in Mexico.

Thomas Pakenham set out on a **quest**. Armed with 30 pounds of camera equipment, the British historian went searching for fascinating trees. As Pakenham says, he was in search of trees with “noble brows and strong personalities.” He wrote a book about his experiences, with photographs of the many different “personalities” he found. His portraits show the wide range in tree sizes and shapes. Some of the tiny bonsai trees of Japan are less than a foot tall, even though they are full-grown and many years old. On the other hand, in

California, Pakenham found “General Sherman”—the name given to a giant sequoia tree that is considered to be the largest single living thing on Earth.

Pakenham’s search brought him face to face with many remarkable trees in beautiful **settings** all around the world. A tree in Mexico, the Montezuma cypress, has a trunk that is 190 feet around. Similarly, a tree called a “dancing lime” in Germany once held an orchestra on its bottom branches! Pakenham hopes these and other trees will help his message grow: “We shouldn’t take them for granted.”



TREES AT WORK

From steamy rain forests to snowy mountainsides, trees are among nature's hardest workers in any climate!

KEEP IT DOWN!

In noisy areas such as near airports and freeways, trees can absorb sound. They **reduce**, or cut down, the noise almost as effectively as stone walls.

EARTH FRIENDLY

Trees reduce the effects of carbon dioxide, a cause of global warming. Trees absorb and "lock up" carbon dioxide, keeping it from harming the environment.

TAKE A BREATH

In just one season, a mature tree can produce as much oxygen as ten people inhale in one year.

STAY COOL

Trees can reduce heating costs by breaking the force of winter winds that **buffet** and batter homes. In summer, trees can keep areas of cities as much as 12 degrees Fahrenheit cooler than areas without trees.

STRONG ROOTS

Top layers of soil can be carried away by wind and water. This can cause **major** environmental problems, such as floods and clogged waterways. Trees hold soil in place.

TOP 5 MOST COMMON TREES IN THE U.S.

In the United States, the last Friday in April is Arbor Day. More than 1 million trees were planted on the first Arbor Day in 1872. In 2002, 130 years later, Americans celebrated by planting 18 million trees during the year. Here are the most common trees in this country. Are any of them in your neighborhood?



Find out more about identifying trees at www.macmillanmh.com



1. Silver Maple



2. Black Cherry



3. Box Elder



4. Eastern Cottonwood



5. Black Willow

Comprehension Genre

A **Nonfiction Article** in a newspaper or magazine presents facts and information.



Text Structure

Compare and Contrast

Authors compare two things by telling how they are alike or different. They may use signal words such as *both*, *alike*, or *different*.

Forests of the WORLD

How are geography and climate related to the kinds of trees, plants, and animals that inhabit different forests around the world?

Monteverde Cloud Forest
Preserve, Costa Rica



Giant redwoods in California.
Redwoods are cone-bearing trees.

Have you visited any biomes lately? A biome is a large community of plants and animals that is supported by a certain type of climate. Biomes like the Arctic tundra—where cold winds **buffet** anything that appears on the barren landscape—are treeless. Many other areas in the world are covered with different kinds of trees. Here are three types of forest biomes.



Deciduous forest in autumn

Coniferous Forest

If you are on a **quest** to find a coniferous forest biome, you will want to head south of the Arctic tundra. This type of forest stretches from Alaska southward across North America as well as across Europe and Asia.

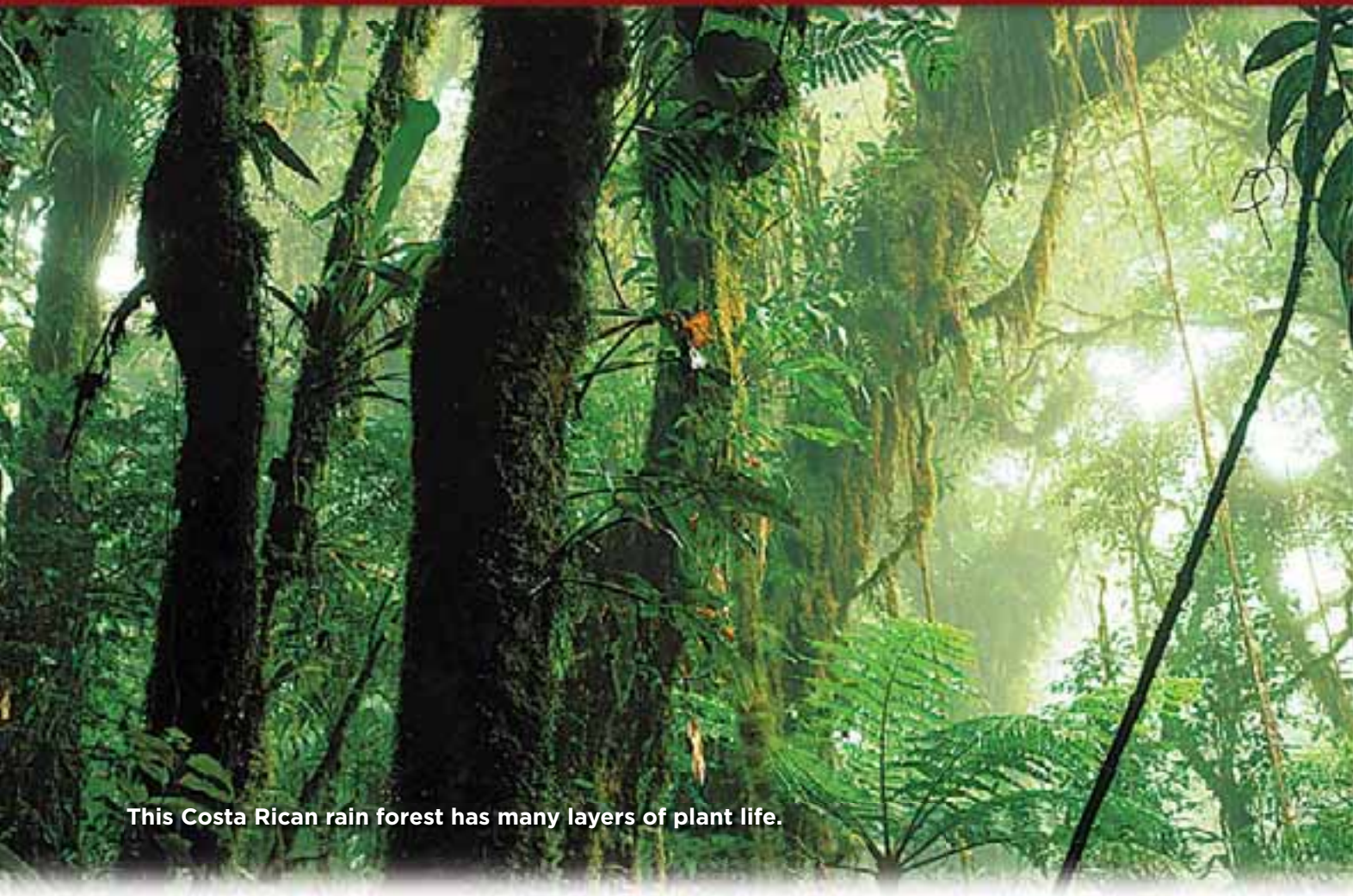
Coniferous forests consist mainly of cone-bearing trees such as spruce, hemlock, and fir. The soil is not very rich, because there are no leaves to decompose and make the ground suitable for growth. This will **reduce** the growth of other kinds of plant life.

Some animals that thrive in this biome are ermine, moose, red fox, snowshoe rabbits, and great horned owls.

Deciduous Forest

Do you want to visit a deciduous forest in person? This biome is in the mild-temperate zone of the Northern Hemisphere. **Major** deciduous forests are found in eastern North America, Europe, and eastern Asia.

Deciduous trees lose their leaves in the fall. The natural decaying of the fallen leaves enriches the soil and allows all kinds of plant life to grow.



This Costa Rican rain forest has many layers of plant life.

Oak, beech, ash, and maple trees are typical of deciduous forests, and many types of insect and animal life abound. In the U.S., these forests are home to many animals, including deer, American gray squirrels, rabbits, raccoons, and woodpeckers.

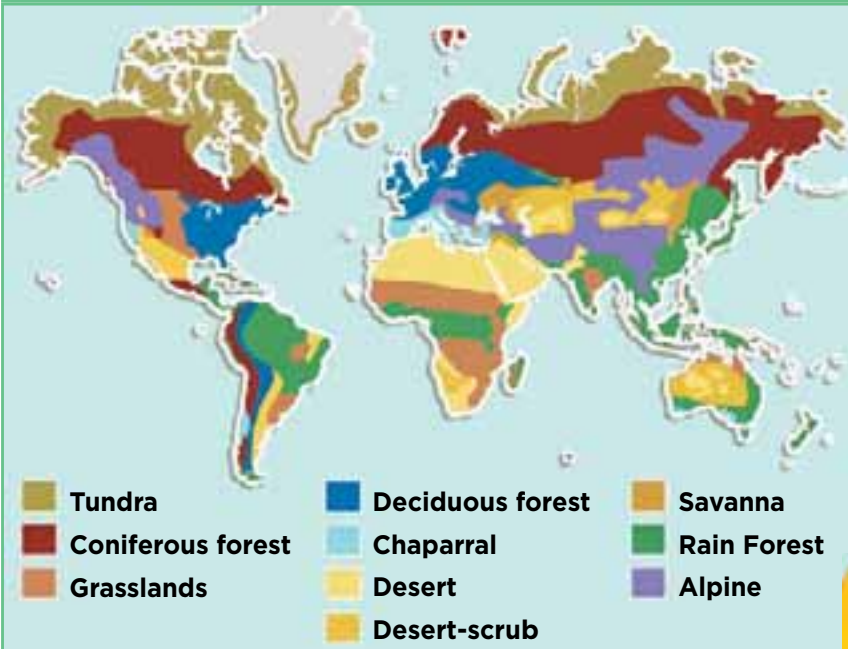
Rain Forest

Tropical rain forests are found in Asia, Africa, South America, Central America, and on many of the Pacific islands. Almost half the total area of the world's rain forests is in Brazil.

Tropical rain forests receive at least 70 inches of rain each year and have more species of plants and animals than any other biome. The thick vegetation absorbs moisture, which then evaporates and falls as rain.

A rain forest grows in three layers, like the levels in a stadium. The canopy, or tallest level, has trees between 100 and 200 feet tall. The second level, or understory, contains a mix of small trees,

Biomes of the World



Orangutan

Think and Compare

vines, and palms, as well as shrubs and ferns. The third and lowest level is the forest floor, where herbs, mosses, and fungi grow.

The combination of heat and moisture makes tropical rain forests the perfect **settings** for more than 15 million types of plants and animals. Some of the animals of the tropical rain forest are the anteater, jaguar, lemur, orangutan, macaw, sloth, and toucan. Among the many plant species are bamboo, banana trees, and rubber trees.

The floor of this rain forest is covered with ferns and mosses.



1. What three types of forest biomes does this article describe?
2. How is the soil in a coniferous forest different from the soil in a deciduous forest?
3. Think of a forest you have visited or that grows near where you live. Describe the plants and animals that live there.
4. The trees listed in the "Top 5 Most Common Trees in the U.S." on page 81 can be classified into a single category. Based on "Forests of the World," what category do you think that is?





Test Strategy

Right There

You can put your finger on the answer. Look for key words in the question. Then find those key words in the selection.

The aftermath of a wildfire

THE SCIENCE OF WILDFIRES

Wildfires result from a combination of fuel, dryness, and a trigger. Each factor determines how strong the blaze will be. Fuel means flammable solids that, with oxygen, feed the fire. Dryness can be caused by short-term periods with little rain or by lengthy drought. Triggers can be as natural as a lightning strike, as innocent as a campfire, or as careless as a stray match.

Weather is the primary force that creates or ends wildfires. Once wildfires start burning, they create their own weather. First, smoke and heat from fires can rise thousands of feet in the air, creating an empty space below them. Cooler air rushes in to fill the space, but

the fresh air brings oxygen that fuels the flames. This convection system creates powerful, hot winds that dry out and preheat fuel ahead of the fire. This helps the fire move forward and even jump natural barriers, such as rivers.

A fire dies when it cannot get fuel, heat, or oxygen. The main strategy for fighting wildfires is containment: surround the fire and starve it. Helicopters and tanker airplanes can drop water or chemicals to slow the spread of flames. Firefighters can also set up fire lines—areas cleared of any fuel that would allow the fire to spread. Controlled fires are sometimes set to deny fuel to an approaching blaze.

Directions: Answer the questions.

1. Which term means a strategy to fight a wildfire by depriving it of fuel?

- A triggering
- B flame retardant
- C containment
- D convection system

Tip

Look for key words.

2. What triggers wildfires?

- A Matches, campfires, or lightning can trigger a wildfire.
- B Controlled fires provide fuel for the blaze.
- C Hot, dry winds preheat fuel to create a convection system.
- D Tanker airplanes spread the flames.

3. Why do firefighters set up fire lines?

- A to create a fuel-free area
- B to create a fire-resistant forest
- C to restore grassland
- D to create safe zones for forest homes

4. How might dropping chemicals and creating fire lines be more effective together than if used separately?

5. Describe the role weather can play in both creating and ending wildfires. Use details from the article to support your answer.



Write to a Prompt

In the selection “The Science of Wildfires,” you read about forest fires. Explain what strategies you would use to fight a wildfire that was moving rapidly toward your community. Use examples from the selection to support your answer. Include specific details to support your main idea.

Let's Fight Fires!

The fire in our community is spreading too quickly for firefighters to put out. Our tanker planes have not improved the situation at all.

If we want to save our homes, we must fight fire with fire. We need to cut all the trees and brush on the edge of our community. This will steal the fire's fuel and, we hope, stop the fire before it reaches our town.

There are no guarantees. The wind can carry embers half a mile. We will have to do more. We will need to set a backfire. This means setting fire to the forest between the wildfire and the fire line we create. The prevailing wind will spread the fire toward us. I know it sounds crazy, but we really won't be helping the wildfire. By setting this smaller, more controllable fire, we hope to stop the wildfire more easily at the fire line. The backfire will burn away all the fuel between us and the wildfire. When the wildfire reaches the burned out area, it will go out.



I used details to make my point and support my ideas.

Writing Prompt

In the selection “The Science of Wildfires,” you read different ideas about the best way to deal with forest fires. Explain which two of the approaches described in the article you think will work the best. Write your response in two paragraphs, and include specific details that support your main ideas.

Writer's Checklist

- ☒ Ask yourself, who is my audience?
- ☒ Think about your purpose for writing.
- ☒ Use details to support your main idea.
- ☒ Plan your writing before beginning.
- ☒ Be sure your ideas are clear and organized.
- ☒ Use your best spelling, grammar, and punctuation.